



The association between social support and
posttraumatic stress symptoms in relation to treatment
change in asylum seekers and refugees

Master thesis

by

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Abstract

Background: Studies about factors that might be related to treatment change in posttraumatic stress symptoms and other psychological complaints in refugees are rare. **Aims:** The purpose of this study was to examine the association between social support, social wellbeing and posttraumatic stress, anxiety, and depression symptoms in relation to treatment change in refugees living in the Netherlands. Furthermore, the influence of gender on this relationship was examined. **Methods:** Data from 180 refugees, who were treated at Foundation Centrum `45, were collected through self-report questionnaires (HTQ, HSCL-25, ResQ, and WHOQOL). There were two periods of measurement: before treatment and after treatment. **Results:** The results showed a significant decrease in treatment change of posttraumatic stress symptoms and anxiety symptoms. Social wellbeing was significantly associated with this treatment change, whereas social support was not. Furthermore, gender did not moderate this relationship. **Conclusion:** This study attempted to provide a better understanding of factors that are important to optimize the treatment of traumatized refugees, but the results indicate that it is still not clear how social support and wellbeing in this specific group are related to the effectiveness of treatment. More research about the impact of social support and social wellbeing on treatment and appropriate interventions for refugees is needed.

Key words: asylum seekers, refugees, social support, posttraumatic stress disorder (PTSD), trauma treatment

Introduction

'Here people were living without hope of life because you cannot go back home, I could not go anywhere, don't have homeland, my parents are dead, our house burnt down, the same people who burned our compound, and did the raping are still there (even one among them was our neighbor). I was a victim of a bad politics, tribalism in a country where there is no respect of the human life, freedom of expression, social justice and democracy. Up to now, I still suffer psychologically from trauma and losses of both parents and members of my family and other innocent people. When I remember about others still suffering there, tears come in my eyes, and I start crying in my heart' ("Sanctuary Australia Foundation", n.d.).

Millions of people around the world today suffer daily from the effects of unexpected extreme traumatic events such as torture, warfare, violence, environmental disaster and political, ethnic and religious persecution or other forms of prolonged repeated trauma. According to the Office of the United Nations High Commissioner for Refugees (UNHCR), at the end of 2011, there were 15,2 million refugees worldwide, of which 74,598 people are living in the Netherlands (UNHCR, 2012). Refugees and asylum seekers are forced to flee their countries in order to reach safety, to protect their freedom, and to gain hope of a better life.

Asylum seekers are people who fled their countries, applied for refugee status in the new country, and are waiting for the decision on his or her application for asylum. Refugees have obtained a residence permit; they have been recognized as being in fear of being persecuted for reasons such as race, religion, membership of a particular political group or opinion (UNHCR, 2011).

Asylum seekers and refugees can develop serious mental health problems due to having experienced such traumatic events, forced migration, and resettlement in new unfamiliar environments (Hollifield et al., 2002). As a consequence of these experiences,

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refugees and asylum seekers can develop psychiatric disorder such as posttraumatic stress disorder (PTSD) (Palic & Elklit, 2010).

PTSD is a severe psychiatric disorder resulting from exposure to a life threatening event, and is perceived as being in imminent danger (Ehlers & Clark, 2000). According to the diagnostic systems, this leads to experiencing symptoms such as intrusiveness, avoidance, and hyper arousal (DSM IV TR: American Psychological Association, 2000; ICD 10: World Health Organization, 1992). According to the systematic review of Fazel, Wheeler, and Danesh (2005) PTSD is one of the most frequently reported mental health problems in refugees. This review showed that refugees who resettled in Western countries are probably ten times more likely to develop PTSD than the general population in the resettlement country (Fazel, Wheeler, & Danesh, 2005).

The prevalence rate of PTSD in adult refugees varies widely, from 4% (Steel, Silove, Phan, & Bauman, 2002) to 86% (Carlson & Rosser-Hogan, 1994; Mollica, McInnes, Poole, & Tor, 1998). Steel and colleagues (2009) reported in their meta-analysis of 181 studies an adjusted prevalence rate of 30.6% of PTSD among refugees. The prevalence rate of other psychological disorders such as mood and anxiety disorders also appears to be high amongst this group (Turner, Bowie, Dunn, Shapo, & Yule, 2003).

Several studies investigated the association between PTSD and gender in people exposed to war. Female gender has been identified as a risk factor for PTSD (Brewin et al., 2000; Durakovic-Belko, Kulenovic & Dapic, 2003; Derluyn & Broekaert, 2007; Huemer et al., 2011), as females are twice as likely as men to develop PTSD during their lifetime (10.4% versus 5.0%; Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995). According to a review about gender differences in PTSD, several explanations have been advanced for women's higher risk of PTSD; it may be due to the type of trauma experienced (i.e. more interpersonal violence, particularly of a sexual nature), younger age at the time of trauma exposure, stronger

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perceptions of threat and loss of control, lack of social support, and gender specific psychological and biological reactions to trauma (Olf, Langeland, Draijer, & Gersons, 2007).

Another risk factor for the development of PTSD is the lack of social support (Brewin, Andrews, & Valentine, 2000). Social support is considered to be one of the important factors of health in the general population (Wilkinson & Marmot, 2003). People who receive less social support are more likely to experience a lower quality of life. Hence the relationship between social support and posttraumatic stress symptoms is one of the most consistent associations observed in trauma research (Brewin, Andrews, & Valentine, 2000; Ozer, Best, Lipsey & Weiss, 2003). Various studies have demonstrated the importance of social support because it is a valuable resource in dealing with trauma and stress (Brewin et al., 2000; Ozer et al., 2003). Social support also plays a significant role in the recovery process of patients who suffer from PTSD (Hobfoll et al., 1995). Social support can be seen as a healing, protective factor which facilitates the recovery from a trauma-inflicted wound (House et al., 1994). It has been proved that social support is related to a decrease of posttraumatic stress symptoms in treatment of PTSD (Thrasher et al., 2010). Moreover, other studies have shown that social support is associated with increased efficacy of treatment, indicating that patients with a high level of social support show more symptoms of improvement (Galea et al., 2002; Yuan et al., 2011).

For refugees, social support appears to be an important protective factor as well, especially in the recovery from PTSD (Thrasher et al., 2010). According to Hernandez and colleagues (2005), one of the most important sources of support for refugees is their informal social network. Being a part of a community increases the probability of social bonding and perceived social support for refugees (Barnes & Aguilar, 2007). For example they can support each other by sharing their stories and experiences (Snitch et al., 2010). Despite the demonstrable importance of social support for asylum seekers and refugees, there is a lack of research about the long term effects on posttraumatic stress symptoms. Furthermore, the role

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of social support in the treatment change of posttraumatic stress symptoms in refugees is still not clear (Vogt, King, & King, 2007).

According to some studies, there are gender differences in the relationship between social support and mental health (Karwachi & Berkman, 2001). These studies suggest that social support and social networks may be more important for women's mental health than for men's (Bultman et al., 2002; Olstad et al., 2001). In the context of experiencing traumatic events, the results show that social support in general is more protective towards women with posttraumatic stress symptoms than towards men (Dybdahl, 2001).

Most of the studies that examine the mental health of refugees have focused on the diagnosis of PTSD (Kessler, Chiu, Demler, Merikangas, & Walters, 2005). However, despite the evidence that refugees suffer from PTSD, few studies have examined the effect of the treatment for PTSD in this population (Crumlish & O'Rourke, 2010). This review suggests that no treatment for this group was firmly supported, except for some evidence on narrative exposure therapy (NET) and cognitive-behavioral therapy (CBT) (Crumlish & O'Rourke, 2010).

Studies of treatment outcomes in refugees produce disparate results. Some studies show a decrease in posttraumatic stress symptoms after treatment of PTSD (Boehbkein et al., 2004, De Winter & Drozdek, 2004; Drozdek et al., 2012 Neuner et al, 2010), while other studies demonstrate chronic mental health problems in refugees, despite receiving intensive treatment (Boehnlein et al., 2005, Carlsson, Mortensen, & Kastrup, 2005, Carlsson, Olsen, Kastrup, Mortensen, 2010). While some studies suggest that trauma-focused treatments promise a decrease in posttraumatic stress symptoms, a critical review of psychological treatment of PTSD in refugees indicates that there is need for more research about different approaches to treatment change in this group (Nickerson, Bryant, Silove, & Steel, 2011). However, no consensus has been reached about what could lead to meaningful treatment change for refugees. Given that, it is important to identify factors which may influence the

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treatment change in this group, such as the role of social support and gender in relation to treatment effects.

Because of the current flow of refugees from all over the world, the need for special care and prevention increases. Also a better understanding of the situation of the asylum seekers and refugees is important because that can help clinicians in their prevention, early diagnosis, and treatment of PTSD in this group. To the author's knowledge, no study has focused specifically on the influence of social support on posttraumatic symptoms in relation to treatment change in refugees and asylum seekers in the Netherlands. Therefore, it is of considerable importance to identify the relation between social support and treatment change in posttraumatic stress symptoms in this population.

The objective of this study was to examine the association between social support and posttraumatic stress symptoms in relation to treatment change in refugees and asylum seekers living in the Netherlands. Therefore, it was hypothesized that more social support will predict a reduction in posttraumatic stress symptoms in this population after receiving treatment. Furthermore, the influence of gender in the relationship between perceived social support and posttraumatic stress symptoms was examined. It was hypothesized that the role of social support in treatment change differs between men and women. The relation between social support and treatment change was expected to be stronger among women than men.

Methods

Participants and procedure

In this study, data from 180 patients were collected at Foundation Centrum '45, a Dutch national institute for specialist diagnosis and treatment of psycho-trauma symptoms and problems resulting from persecution, war, and violence.

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Participants included in this study met the following criteria: (a) they were refugees or asylum seekers who had been exposed to traumatic events; (b) they were refugees and asylum seekers who were treated for their psychological distress. Three participants were not included in the analysis because they did not meet the criteria of being a refugee or asylum seeker.

Of the remaining 177 patients participating in this study, 51 were female and 126 male, the mean age was 44 years ($SD = 8.73$), with a range of 24-72 years. The refugees and asylum seekers fled from 30 different countries with most of them from Bosnia-Herzegovina ($N = 37$), Iran ($N = 31$), Iraq ($N = 27$), Afghanistan ($N = 18$), former Yugoslavia ($N = 15$), and Turkey ($N = 9$) (the complete details about the sample characteristics are provided in the appendix).

There were two periods of measurement: at the intake (Pre-treatment, T1), where the participants completed the questionnaires one week before the treatment started and one/two weeks after the treatment finished (Post-treatment, T2). Participants signed the informed consent accepting their data being used for scientific research.

Measures

The data in the present study were collected through self-report questionnaires completed by patients. The questionnaires used were the Harvard Trauma Questionnaire (HTQ), the Hopkins Symptom Checklist (HSCL-25), Resources Questionnaires (ResQ), and the World Health Organization Quality of life questionnaire (WHOQOL).

Psychological complaints

Posttraumatic Stress Symptoms

Posttraumatic stress symptoms were measured with the Harvard Trauma Questionnaire (HTQ; Mollica et al., 1992). The HTQ is a self-report measure and assesses several traumatic events, mostly experienced in war situations. The questionnaire consists of different parts of which

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the second part was used in the present study. In the first part of the HTQ, participants were asked to indicate which traumatic events they had experienced, witnessed, or heard of, out of a total list of 20 traumatic experiences. In the second part of the HTQ, which was used for this study, the severity of DSM-IV PTSD symptoms was assessed by asking participants to indicate how much they were bothered by 16 PTSD-symptoms during the past week on a 4-point scale ranging from 1 (not at all) to 4 (extremely). Measures of experienced symptom severity with regard to PTSD in general, intrusion, avoidance, and arousal symptoms were computed by averaging responses on the concerning items (range: 1 - 4).

The HTQ is a widely used, culturally sensitive checklist and available in many different languages (Kleyn, Hovens & Rodenburg, 2001). The HTQ was administered in the patient's native language if possible; when necessary, interpreters were used. In a review, Hollifield and colleagues (2002) showed that this instrument has been found to be statistically reliable and valid in many different studies with a traumatized population such as refugees. The HTQ exhibited good internal consistency ($\alpha = .86$).

Symptoms of depression and anxiety

To assess depression and anxiety symptoms, the Symptom Checklist (HSCL-25) was used (Mollica et al., 1987, 1996). The HSCL-25 measures symptoms that the patients have experienced one week before the measurement. Participants were asked to indicate how much they were distressed by 10 symptoms of anxiety and 15 symptoms of depression on a 4-point scale ranging from 1 (not at all) to 4 (extremely).

The HCSL-25 is a self-report questionnaire which is a valid instrument and widely used with the population of refugees and asylum seekers. This instrument is also available in many different languages (Pernice & Brook, 1996; Smith Fawzi et al., 1995; Thapa & Hauff, 2005). The HCSL-25 was administered in the patient's native language if possible; interpreters were used when necessary. The questionnaire has good psychometric properties (Hollifield et al.,

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2002). The HCSL-25 exhibited good internal consistencies for the anxiety scores ($\alpha = .84$), and also for the depression scores ($\alpha = .94$).

Social support and social wellbeing

Social wellbeing was measured with the World Health Organization Quality of life questionnaire (WHOQOL) (WHOQOL Group, 1998). The WHOQOL measures four domains of quality of life, including physical, psychological, social and environmental aspects. In the current study for measuring social wellbeing, the social domain was used. The validity and reliability of the WHOQOL is acceptable with an internal consistency ($\alpha = .68$) (Skevington, Lotfy & O'Connell, 2004). According to de Vries (1996) the WHOQOL is an instrument which is internationally applicable, multi-dimensional and cross-cultural.

Social support was measured in this study by the Resources Questionnaire (ResQ) (Kleijn, Van Heck & Van Waning, 1998) was used. The ResQ is a Dutch questionnaire which was developed at Centrum '45. The ResQ consists of 33 items and identifies the availability of resources in difficult situations. Besides, it assesses which situation generally is experienced as supportive by the participants. The questionnaire consists of the following eight subscales: social support, creativity / art, expression, equipment, sports, spirituality, positive self-image, and medical assistance. For the present study only the 'social support' scale was used. The ResQ is a statistically reliable questionnaire with a good internal consistency ($\alpha = .85$); the validity of ResQ has not yet been studied (Kleijn, Van Heck & Van Waning, 2001).

Statistical analysis

Statistical analyses were completed using SPSS statistics 20 for Windows. First, demographic findings were carried out. All statistical tests were two-tailed with an alpha level set at 0.05.

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To assess the association between social support and posttraumatic stress symptoms and anxiety depression symptoms in relation to treatment change (T2-T1), six multiple hierarchical regression analyses were carried out. The treatment change in posttraumatic stress symptoms (and anxiety depression symptoms) was used as dependent variable and social support as the independent variable.

To assess the role of gender in this study, the moderating role of gender on the relationship between social support and posttraumatic stress symptoms (and anxiety depression symptoms) in treatment change was examined by entering the interaction terms of gender, social support, and posttraumatic stress symptoms in relation to treatment change. Before conducting the multiple regression analysis, assumptions were tested. The categorical moderating variable genderType equation here. was converted into a dichotomous dummy variable, differentiated into male (0) and female (1).

Results

To evaluate whether there was a statistically significant treatment change in symptoms of anxiety, depression and PTSS, a paired-samples t-test was conducted. Thereafter, six hierarchical multiple regression analyses were conducted to assess whether treatment change in anxiety, depression and PTSS was significantly associated with perceived social support and gender as moderation. Preliminary analyses were conducted to ensure no violation of the assumptions of normality, linearity, multicollinearity and homoscedasticity.

Treatment change in anxiety and the influence of social support (ResQ)

First, a paired-samples t-test was conducted to evaluate the treatment change in anxiety. There was a significant decrease in anxiety symptoms from time 1 (prior to treatment) to time 2 (after treatment): ($M = -.33$, $SD = .65$), $p = .00$ (two-tailed).

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Subsequently, a multiple regression was conducted to see whether perceived social support (ResQ) and gender as a moderator predicted this decrease in anxiety. Perceived social support (Resq) was entered at step 1, explaining .1% of the variance of anxiety, $R^2 = .001$, $F(1, 54) = .07$, $P = .79$, indicating that social support did not predict symptom change in anxiety. Next, gender was entered in the second step of the regression. Gender did not account for any significant additional variance in the treatment change relating to anxiety, ΔR^2 (R Square Change) = .00, ΔF (F Change) (2, 53) = .01, $p = .91$. In the final step of the regression analysis, an interaction term between social support and gender in relation to treatment change relating to anxiety was created. This did also not result in any significant variance, $\Delta R^2 = .002$, $\Delta F(3, 52) = .16$, $p = .75$. See Table 1 for details of the results.

Table 1

Regression of the influence of social support (ResQ) in treatment change relating to anxiety and the moderation effect of gender (N=177)

Variable	B	Std.Error	Beta	p
<hr/>				
Step 1 (R^2 , R^2 adj)	(.001, -.02)			
(Constant)	-.36	.19		.06
Social support (ResQ)	.01	.04	.04	.79
<hr/>				
Step 2 (R^2 , R^2 adj, ΔR^2)	(.002, -.04, .00)			
(Constant)	-.383	.209		.07
Social support (ResQ)	.010	.035	.04	.78
Gender	.023	.199	.02	.91
<hr/>				
Step 3 (R^2 , R^2 adj, ΔR^2)	(.004, -.05, .002)			
(Constant)	-.411	.228		.08
Social support (ResQ)	.015	.039	.06	.70
Gender	.168	.489	.12	.73
Social support x Gender	-.030	.092	-.11	.75

- R^2 (R Square), R^2 adj (Adjusted R Square), ΔR^2 (R Square Change)

-Depended Variable: Treatment change relating to Anxiety

Treatment change in anxiety and the influence of social wellbeing (WHOQOL)

To test whether social wellbeing (WHOQOL) and, gender as a moderator predicted the treatment change relating to anxiety, a multiple regression was conducted. Social wellbeing (WHOQOL) was entered at step 1, explaining 9% of the variance of treatment change relating to anxiety, $R^2 = .09$, $F(1, 50) = 4.80$, $P = .03$, indicating that social wellbeing predicts a

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statistically significant treatment change relating to anxiety. Higher rates of social wellbeing indicated a higher reduction of anxiety related symptoms. Next, gender was entered in the second step of the regression. Gender did not account for any significant additional variance in the treatment change relating to anxiety, $\Delta R^2 = .002$, $\Delta F(2, 49) = .08$, $p = .77$. In the final step of the regression analysis, an interaction term between social support and gender in relation to treatment change relating to anxiety was created, which also did not account for any significant variance, $\Delta R^2 = .00$, $\Delta F(3, 48) = .01$, $p = .94$. See Table 2 for details of the results.

Table 2

Regression of the influence of social wellbeing (WOQOL) in treatment change relating to anxiety and the moderation effect of gender (N=177)

Variable	B	Std.Error	Beta	p
Step 1 (R^2, R^2 adj)				
(Constant)	-.77	.22		.00**
Social wellbeing (WHOQOL)	.01	.01	.29	.03*
Step 2 (R^2, R^2 adj, ΔR^2)				
(Constant)	-.79	.23		.00**
Social Wellbeing (WHOQOL)	.01	.01	.29	.03*
Gender	.06	.20	.04	.77
Step 3 (R^2, R^2 adj, ΔR^2)				
(Constant)	-.79	.24		.00*
Social wellbeing (WHOQOL)	.01	.01	.29	.04**
Gender	.11	.67	.07	.88
Social support x Gender	-.00	.02	-.03	.94

-Note: * $p < .05$, ** $p < .01$,

- R^2 (R Square), R^2 adj (Adjusted R Square), ΔR^2 (R Square Change)

-Depended Variable: Treatment change relating to Anxiety

Treatment change in depression and the influence of social support (ResQ)

A paired-samples t-test was conducted to evaluate the treatment change relating to depression.

There was a small decrease in symptoms of depression from time 1 (prior to treatment) to time 2 (after treatment), which was not statistically significant ($M = -.08$, $SD = .52$),

$p = .25$ (two-tailed).

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Subsequently, a multiple regression was conducted to see whether perceived social support (ResQ) and gender as a moderator predicted this small decrease in depression. Perceived social support (ResQ) was entered at step 1, explaining .0 % of the variance of treatment change relating to depression, $R^2 = .000$, $F(1, 53) = .004$, $P = .95$, indicating that social support was not significantly associated with treatment change in depression. Next, gender was entered in the second step of the regression. Gender did not account for any significant additional variance in the treatment change of depression, ΔR^2 (R Square Change) = .001, ΔF (F Change) (2, 52) = .04, $p = .85$. In the final step of the regression analysis, an interaction term between social support and gender in relation to treatment change in depression was created, which also did not account for a significant proportion of the variance, $\Delta R^2 = .05$, $\Delta F(3, 51) = 2.77$, $p = .10$. See Table 3 for details of the results.

Table 3

Regression of the influence of social support (ResQ) in treatment change relating to depression and the moderation effect of gender (N=177)

Variable	B	Std.Error	Beta	p
<hr/>				
Step 1 (R^2 , R^2 adj)	(.00, -.02)			
(Constant)	-.09	.12		.57
Social support (ResQ)	.00	.03	.00	.95
<hr/>				
Step 2 (R^2 , R^2 adj, ΔR^2)	(.001, -.04, .00)			
(Constant)	-.08	.17		.63
Social support (ResQ)	.00	.03	.00	.96
Gender	-.03	.16	-.03	.85
<hr/>				
Step 3 (R^2 , R^2 adj, ΔR^2)	(.05, -.00, .05)			
(Constant)	.03	.18		.86
Social support (ResQ)	-.02	.03	-.10	.51
Gender	-.62	.37	-.53	.12
Social support x Gender	.12	.07	.56	.10

$-R^2$ (R Square), R^2 adj (Adjusted R Square), ΔR^2 (R Square Change)

-Depended Variable: Treatment change relating to Depression

Treatment change in depression and the influence of social wellbeing (WHOQOL)

A multiple regression was conducted to see whether social wellbeing (WHOQOL) and gender as a moderator were associated with treatment change relating to depression. Social wellbeing (WHOQOL) was entered at step 1, explaining 4 % of the variance of treatment

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change relating to depression, $R^2 = .04$, $F(1, 49) = 1.89$, $P = .17$, indicating that social wellbeing was not significantly associated with treatment change relating to depression. Next, gender was entered in the second step of the regression. Gender did not account for a significant amount of additional variance in the treatment change of depression, ΔR^2 (R Square Change) = .00, ΔF (F Change) (2, 48) = .01, $p = .92$. In the final step of the regression analysis, an interaction term between social wellbeing and gender in relation to treatment change in depression was created, which also did not account for any significant variance in treatment change relating to depression, $\Delta R^2 = .005$, $\Delta F(3, 47) = .27$, $p = .61$. See Table 4 for details of the results.

Table 4

Regression of the influence of social wellbeing (WOQOL) in treatment change relating to depression and the moderation effect of gender (N=177)

Variable	B	Std.Error	Beta	p
<hr/>				
Step 1 (R^2 , R^2 adj)	(.04, .02)			
(Constant)	-.32	.18		.08
Social wellbeing (WHOQOL)	.01	.00	.19	.17
<hr/>				
Step 2 (R^2 , R^2 adj, ΔR^2)	(.04, -.00, .00)			
(Constant)	-.33	.19		.09
Social wellbeing (WHOQOL)	.01	.00	.19	.18
Gender	.02	.17	.01	.92
<hr/>				
Step 3 (R^2 , R^2 adj, ΔR^2)	(.04, -.02, .00)			
(Constant)	-.36	.20		.08
Social wellbeing (WHOQOL)	.01	.01	.22	.15
Gender	.29	.55	.25	.60
Social support x Gender	-.01	.01	-.25	.61

$-R^2$ (R Square), R^2 adj (Adjusted R Square), ΔR^2 (R Square Change)

-Dependent Variable: Treatment change relating to Depression

Treatment change in posttraumatic stress symptoms and the influence of social support (ResQ)

Primarily, a paired-samples t-test was conducted to evaluate the treatment change relating to posttraumatic stress symptoms. There was a significant decrease in posttraumatic stress symptoms from time 1 (prior to treatment) to time 2 (after treatment): ($M = -.31$, $SD = .60$), $p = .00$ (two-tailed).

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Subsequently, a multiple regression was conducted to test whether perceived social support (ResQ) and gender as a moderator predicted this decrease in posttraumatic stress symptoms. Perceived social support (ResQ) was entered at step 1, explaining .1% of the variance of treatment change relating to posttraumatic stress symptoms, $R^2 = .001$, $F(1, 155) = .22$, $P = .64$, indicating that social support did not predict symptom change in posttraumatic stress symptoms. Next, gender was entered in the second step of the regression. Gender did not account for any significant variance in the treatment change of posttraumatic stress symptoms, $\Delta R^2 = .004$, $\Delta F(2, 154) = .65$, $p = .42$. In the final step of the regression analysis, an interaction term between social support and gender in relation to treatment change of posttraumatic stress symptoms was created, which did not account for any significant variance in the treatment change relating to posttraumatic stress symptoms, $\Delta R^2 = .002$, $\Delta F(3, 153) = .39$, $p = .57$. See Table 5 for details of the results.

Table 5

Regression of the influence of social support (ResQ) in treatment change relating to posttraumatic stress symptoms and the moderation effect of gender (N=177)

Variable	B	Std.Error	Beta	p
<hr/>				
Step 1 (R^2 , R^2 adj)	(.001, -.00)			
(Constant)	-.35	.10		.00**
Social support (ResQ)	.01	.02	.04	.64
<hr/>				
Step 2 (R^2 , R^2 adj, ΔR^2)	(.006, -.00, .00)			
(Constant)	-.32	.12		.00**
Social support (ResQ)	.01	.02	.04	.65
Gender	-.09	.12	-.07	.42
<hr/>				
Step 3 (R^2 , R^2 adj, ΔR^2)	(.008, -.01, .00)			
(Constant)	-.35	.12		.00
Social support (ResQ)	.02	.02	.06	.50
Gender	.03	.23	.02	.89
Social support x Gender	-.03	.04	-.10	.57

-Note: * $p < .05$, ** $p < .01$,

- R^2 (R Square), R^2 adj (Adjusted R Square), ΔR^2 (R Square Change)

-Depended Variable: Treatment change relating to posttraumatic stress symptoms

Treatment change in posttraumatic stress symptoms and the influence of social wellbeing (WHQOL)

To test whether social wellbeing (WHOQOL) and gender as a moderator predicted the

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treatment change in posttraumatic stress symptoms, a hierarchical multiple regression was conducted. Social wellbeing (WHOQOL) was entered at step 1, explaining 4% of the variance of treatment change in posttraumatic stress symptoms, $R^2 = .04$, $F(1, 142) = 5.73$, $P < .02$, indicating that social wellbeing was statistically significant with treatment change in posttraumatic stress symptoms. Higher rates of social wellbeing indicated a higher reduction of symptom relating to posttraumatic stress. Next, gender was entered in the second step of the regression. Gender did account for a significant, small amount of additional variance in the treatment change of posttraumatic stress symptoms, $\Delta R^2 = .003$, $\Delta F(2, 141) = 3.04$, $p = .05$. In the final step of the regression analysis, an interaction term between social support and gender in relation to treatment change of posttraumatic stress symptoms was created, which did not account for any significant variance in the treatment change of posttraumatic stress symptoms, $\Delta R^2 = .00$, $\Delta F(3, 140) = 2.46$, $p = .26$. See Table 6 for details of the results.

Table 6

Regression of the influence of social wellbeing (WHOQOL) in treatment change relating to posttraumatic stress symptoms and the moderation effect of gender (N=177)

Variable	B	Std.Error	Beta	p
Step 1 (R^2, R^2 adj)				
(Constant)	-.54	.11		.00**
Social wellbeing (WHOQOL)	.01	.00	.19	.02*
Step 2 (R^2, R^2 adj, ΔR^2)				
(Constant)	-.52	.12		.00**
Social wellbeing (WHOQOL)	.01	.00	.19	.02*
Gender	-.07	.12	-.05	.54
Step 3 (R^2, R^2 adj, ΔR^2)				
(Constant)	-.58	.13		.00**
Social wellbeing (WHOQOL)	.01	.00	.25	.01*
Gender	.23	.28	.17	.42
Social support x Gender	-.01	.00	-.25	.26

-Note: * $p < .05$, ** $p < .01$,

- R^2 (R Square), R^2 adj (Adjusted R Square), ΔR^2 (R Square Change)

-Depended Variable: Treatment change relating to posttraumatic stress symptoms

Discussion

This study examined the association between social support and posttraumatic stress symptoms as well as symptoms of anxiety and depression in relation to treatment change in asylum seekers and refugees living in the Netherlands. It was hypothesized that more social support will reduce posttraumatic stress symptoms in this population after receiving treatment. Furthermore, the influence of gender in the relationship between perceived social support and posttraumatic stress symptoms was examined. It was hypothesized that the role of social support for treatment change differs between men and women. Although a handful of studies has examined the relationship between social support and PTSD in this group (i.e. Ahern et al., 2004, Andrews et al., 2003, Gavrilovic et al., 2003), this is, to the author's knowledge, the first study that specifically examined the role of social support in the treatment change of posttraumatic stress, anxiety and depression symptoms in refugees.

The results of the present study indicated a significant decrease in posttraumatic stress symptoms and anxiety symptoms in refugees who received treatment. A small decrease in treatment change of depression symptoms was found as well, but this decrease was not statistically significant. Furthermore, social wellbeing measured by WHOQOL was significantly associated with treatment change in posttraumatic stress symptoms, and symptoms of anxiety. However, social support measured by ResQ was not significantly associated with treatment change in posttraumatic stress symptoms, anxiety and depression symptoms. A reasonable explanation of this difference in results can be that the ResQ is not a valid questionnaire for this population (Kleijn, Van Heck & Van Waning, 2001). This is in contrast to the WHOQOL; many studies have shown that the WHOQOL is a valid and a cross-cultural multi-dimensional instrument (Skevington, Lotfy & O'Connell, 2004; de Vries (1996). Moreover, although these questionnaires are related, they measure different aspects of social support. The ResQ measures the degree of support participants perceived from their social network, while the WHOQOL measures the degree of satisfaction regarding their

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personal relationships. Consequently, the WHOQOL is based on the quality of the relationships, while the ResQ is more based on the quantity of support. This might explain the differences found in the present study. Other studies have also mentioned the importance of quality of support in relation to the development of psychological complaints (Altschuler et al., 2004; Ferlander & Mäkinen, 2009; Giordano & Lindstrom, 2010). Fiorillo & Sabatini (2011), suggest that social relationships do not matter per se, but what really counts is the quality or, in other words, whether these relationships are perceived as satisfactory or not.

On the one hand, this ambiguous result regarding the influence of different facets of social support (measured by ResQ) on treatment change is contradictory to other studies. Social support is in general found to be a significant factor that influences the effectiveness of treatment (Galea et al., 2002; Yuan et al., 2011). More social support is associated with a reduction in symptoms during treatment to a larger extent than any other factors, such as age, trauma severity and number of traumatic life events. Thrasher and colleagues (2010) demonstrated that even though different types of treatment (i.e. cognitive restructuring and exposure therapy) were effective, patients who reported more social support enjoyed more therapeutic benefits than those with less social support. On the other hand, studies on the association between social support and treatment change in posttraumatic stress symptoms are rare, especially such dealing with refugees. Consequently, future studies examining this relationship are needed for this specific group.

Furthermore, this study also investigated the moderating role of gender in relationship between social support and treatment change in posttraumatic stress symptoms, anxiety and depression. In contrast to other studies (Dybdahl, 2001, Karwachi & Berkman, 2001), this study found that gender did not moderate this relationship. Nevertheless, different studies have shown that the relation between gender, social support, and posttraumatic stress symptoms is complex (Christiansen & Elklit, 2008, Elklit & O'Conner, 2005). A possible explanation for the complicating impact of gender on the relationship between social support

and posttraumatic stress symptoms might be that there are different types of support which may affect symptoms of PTSD in men and women in different ways. For example, using social support by talking about a traumatic event might be preferable for women but not for men. The other way around, men may prefer more practical assistance. These kinds of support are most compatible with the preferred coping methods used by each gender. Moreover, whereas women often have different and multiple support sources, adult men frequently cite their spouse or partner as their only confidants and support (Shumaker & Hill, 1991). The variety of the results on gender differences in relation to social support and treatment change in posttraumatic stress symptoms might be explained in part by situational differences such as different social contexts and culture-specific gender roles (Kunovich, 1999), factors we did not include in the present study.

Strengths and limitations

The current study has several limitations. First the instruments which are used in this study are measures for self-reporting that are subject to the comprehension and answers of the participants. Further, the ResQ has not been extensively validated in this specific population. Besides, the population of the present study was very diverse and had different cultural backgrounds, which might affect the findings. Besides, this study focused either on asylum seekers and refugees, while a differentiation can be made between refugees, who have obtained a residence permit and asylum seekers, who are still in the process of achieving residence permit. Because, asylum seekers cannot be sure whether they will actually be allowed to stay or not, may this insecure situation also affect their state of health. Therefore, we must be careful in generalizing these findings. Another limitation of the present study is the role of social support and social wellbeing as the only factors of the treatment change of posttraumatic stress symptoms. However, there might be more factors and more complex models such as mediation models which can influence treatment change in posttraumatic

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stress symptoms in this group. Other critical point is that social support and social wellbeing were measured only at one time (before treatment) which makes a conclusion about causality in this study extra difficult.

Despite its limitations, this study also has notable strengths. A strong issue about of study is that there were two periods of measurement, the intake (Pre-treatment), where the participants completed the questionnaires one week before the treatment started, and one/two weeks after the treatment finished (Post-treatment). Consequently, this study is innovative in that it focuses on the role of social support and social wellbeing in the treatment change of posttraumatic stress symptoms, whereas other studies mainly focus on the relation between PTSD and social support in a cross-sectional design. Besides, this study did not just focus on posttraumatic stress symptoms, but also on other psychological complaints such as anxiety and depression symptoms, given the psychiatric comorbidity among refugees (Fazel, Wheeler & Danesh, 2005; Hinton et al., 2001; Turner et al., 2003). Additional strength is added to the study by the investigation of the moderating role of gender in the relationship, because of the diversity of results about gender differences in the literature. Also the large number of participants included can be mentioned as strengths, contrary to other refugee studies which often use small sample sizes (Hinton et al., 2004; Paunovic & Öst, 2001). Finally, this study used different instruments for the measurement of facets of social support: the ResQ for perceived social support and the WHOQOL for the measurement of social wellbeing. This facilitated comparisons between instruments and provided more nuanced information about the role of social conditions.

Practical implications

The relationship between social wellbeing and treatment change in posttraumatic stress symptoms and anxiety symptoms found in this study has been cited as evidence that clinicians should bolster social wellbeing in clinical treatments (King, Taft, King, Hammond, & Stone,

2006). Although negative cognition was not examined in the present study, treatments that emphasize the role of dysfunctional cognitions in relation to perceived social support can influence treatment change in posttraumatic stress symptoms. Such focus may be relevant for individuals with insufficient social support following a traumatic event (Foa & Rothbaum, 1998; Resick & Schnicke, 1992). Hence, addressing perceptions of social support in therapy may indeed lead to a decrease in posttraumatic stress symptoms in the treatment of asylum seekers and refugees (Monson, Fredman, & Adair, 2008).

Future research

The results of the current study highlight the need for more studies about the treatment change in posttraumatic stress symptoms and other psychological complaints because of the lack of applied treatments of PTSD in asylum seekers and refugees. Notwithstanding this gap in the literature, different interventions and techniques have been developed and used worldwide to help refugees and asylum seekers suffering from PTSD. For example, the use of group treatment, individual treatment and non-verbal therapies has been shown to be effective in this group (i.e. Drozdek et al., 2012; De Winter & Drozdek, 2004, Orth et al., 2004).

However, beside some evidence for the efficacy of, for example, narrative exposure therapy and cognitive-behavioral therapy, studies about the efficacy of appropriate treatments for asylum seekers and refugees are rare (Crumlish & O'Rourke, 2010). More studies conducted over a longer period of time and with additional periods of measurement would provide more information about symptoms changing during treatment. Furthermore, it is important to examine the influence of more factors that may affect the treatment, such as cultural differences, the socio-economic status of refugees, and the presence of language and cultural barriers. This is particularly important given that a number of studies have shown that these factors play a role in the development and maintenance of PTSD in this group (Carlsson

et al., 2006; Kinzie, 2006; Kivling-Boden & Sundbon, 2001). Nevertheless, still little is known about the influence of these factors in the treatment change of symptoms.

Conclusion

Despite limitations, this study constitutes an important step toward clarifying which factors that influence the treatment change in posttraumatic stress symptoms, anxiety, and depression symptoms among refugees living in the Netherlands. Two important conclusions can be drawn from this study. First, the results indicated that social wellbeing is significantly associated with treatment change in posttraumatic stress symptoms and anxiety symptoms in this group. Second, this study found that gender does not moderate the relation between social support and treatment change in posttraumatic stress symptoms, anxiety and depression symptoms. Naturally, no absolute conclusions can be drawn from the results of the present study because of its limitations. Consequently, this study highlights the need for future research on the role of predicting factors (i.e. social support, culture, age, gender etc.) in the treatment change of posttraumatic stress symptoms in this group. This may provide more knowledge about what is important to optimize the treatment of PTSD, anxiety, and depression in this afflicted and vulnerable population.

Note: I generally used the term refugees also when referring to asylum seekers.

SOCIAL SUPPORT AND TREATMENT CHANGE

Reference:

- Altschuler, A., Somkin, C. P., Adler, N. E. (2004). Local services and amenities, neighborhood social capital, and health. *Social Science and Medicine* 59, 1219-1229.
- American Psychological Association. (2000). *Diagnostic and statistical manual of mental disorders; DSM IV TR*. Washington: American Psychological Association.
- Andrews, B., Brewin, C. R., & Rose, S. (2003). Gender, social support, and PTSD in victims of violent crime. *Journal of Traumatic Stress*, 16, 421-427.
- Boehnlein, J. K., Kinsie, J. D., Sekiya, U., Riley, C., Pou, K., & Rosborough, B. (2004). A ten-year treatment outcome study of traumatized Cambodian refugees. *Journal of Nervous and Mental Disease*, 192, 658-66.
- Barnes, D. M. & Aguilar, R. (2007). Community social support for Cuban refugees in Texas. *Qualitative Health Research*, 17, 225-237.
- Brewin, C. R., Andrews, B., & Valentine, J. D. (2000). Meta-Analysis of Risk Factors for Posttraumatic Stress Disorder in Trauma Exposed Adults. *Journal of Clinical Psychology*, 68, 748-766.
- Bültmann, U., Kant, I. J., Van den Brandt, P. A., & Kasl, S. V. (2002). Psychosocial work characteristics as risk factors for the onset of fatigue and psychological distress: prospective results from the Maastricht Cohort Study. *Journal of Occupational and Environmental Medicine*, 32, 333-45.
- Carlson, E. B., & Rosser-Hogan, R. (1994). Cross-Cultural response to trauma: a study of traumatic experiences and posttraumatic symptoms in Cambodian refugees. *Journal of Trauma and Stress*, 7, 53-58.
- Christiansen, D. M. & Elklit, A. (2008). Risk factors predict post-traumatic stress disorder differently in men and women. *Annals of General Psychiatry*, 7, 24.
- Crumlish, N., & O'Rourke. (2010). A systematic review of treatment for posttraumatic stress

SOCIAL SUPPORT AND TREATMENT CHANGE

- disorder among refugees and asylum-seekers. *Journal of Nervous and Mental Disease*, 198, 237-251.
- Hobfoll, E. S., Dunahoo, J., Monnier, J.(1995). *Conservation of resources and traumatic stress*. In: Freedy, J. R., Hobfoll, S. E, editors. *Traumatic stress from theory to practice*. New York: Plenum, p. 29-47.
- Derluyn, I., & Broekaert, E. (2007). Different perspectives on emotional and behavioral problems in unaccompanied refugee children and adolescents. *Ethnic Health*, 12, 141-162.
- De Winter, B., & Drozdek, B. (2004). Psychomotor therapy: Healing by action. In Wilson, J. P., Drozdek, B (Eds), *Broken spirits: The treatment of traumatized asylum seekers, refugees, war and torture victims* (pp 385-402). New York: Brunner-Routledge.
- Drozdek, B., Kamperman, A.M., Bolwerk, N., Tol, W.A. & Kleber, R.J. (2012). Group therapy with male asylum seekers and refugees with posttraumatic stress disorder: A controlled comparison cohort study of three day-treatment programs. *Journal of Nervous and Mental Disease*, 200, 758-65.
- Durakovic-Belko, E., Kulenovic, A., & Dapic, R. (2003). Determinants of posttraumatic adjustment in adolescents from Sarajevo who experienced war. *Journal of Clinical Psychology*, 59, 27-40.
- Dybdahl, R. (2001). Children and mothers in war: an outcome study of a psychosocial intervention program. *Child Development*, 72, 1214-1230.
- Ehlers, A., & Clark, D. M. (2000). A cognitive model of posttraumatic stress disorder. *Behaviour Research and Therapy*, 38, 319–345
- Elklit, A. & O'Connor, M. (2005), Post-traumatic stress disorder in a Danish population of elderly bereaved. *Scandinavian Journal of Psychology*, 46, 439-445.
- Farhood, L., Zurayk, H., Chaya, M., Saadeh, F., Meshefedjian, G., & Sidani, T. (1993). The impact of war on the physical and mental health of the family: The Lebanese

SOCIAL SUPPORT AND TREATMENT CHANGE

- experience. *Social Science Medicine*, 36, 1555-1567.
- Fazel, M., Wheeler, J. & Danesh, J. (2005). Prevalence of serious mental disorder in 7000 refugees resettled in western countries: a systematic review. *Lancet*, 365, 1309-1314.
- Ferlander, S., Mäkinen, I. H. (2009). Social capital, gender and self-rated health. Evidence from the Moscow Health Survey 2004. *Social Science and Medicine* 69, 1323-1332.
- Fiorillo, D., & F, Sabatini. (2011). Quality and quantity: the role of social interactions in individual health. *Social Science & Medicine* 73, 1644-1652.
- Galea, S., Ahern, J., Resnick, H., Kilpatrick, D., Bucuvalas, M., Gold, J., et al. (2002). Psychological sequelae of the September 11 terrorist attacks in New York City. *New England Journal of Medicine*, 346, 982-987.
- Giordano G. N., Lindstrom M. (2010). The impact of changes in different aspects of social capital and material conditions on self-rated health over time: a longitudinal cohort studies. *Social Science and Medicine*, 70, 700-710.
- Hernandez, G., Altmann, M., Sierra, J.M., Urlaub, H., Diez Del Corral, R., Schwartz, P., Rivera-Pomar, R. (2005). Functional analysis of seven genes encoding eight translation initiation factor 4E (eIF4E) isoforms in *Drosophila*. *Developmental Biology*, 122, 529-543.
- Hobfoll, S., Ritter, C., Lavin, Hobfoll, S., Ritter, C., Lavin, J., Hulszier, M., & Cameron, R. J., Hulszier, M., & Cameron, R. (1995). Depression prevalence and incidence among inner city pregnant and postpartum women. *Journal of Consulting and Clinical Psychology*, 63, 445-453.
- Hollifield, M., Warner, T. D., Lian, N., Krakow, B., Jenkins, J. H., Kesler, J., ... Westermeyer, J. (2002). Measuring trauma and health status in refugees: A critical review. *Journal of the American Medical Association*, 299, 611-621.
- House, J. S., Landis, K. R., Umberson, D. (1994). *Social relationships and health. The sociology of health and illness*. New York: St Martin's Press, p. 83-92.

SOCIAL SUPPORT AND TREATMENT CHANGE

- Huemer, J., Karnik, N., Voelkl-Kernstock, S., Granditsch, E., Plattner, B., Friedrich, M., et al. (2011). Psycho-pathology in African unaccompanied refugee minors in Austria. *Child Psychiatry Human Development, 42*, 307-319.
- Kawachi, I., & Berkman, L. F. (2001). Social ties and mental health. *Journal of Urban Health: Bulletin of the New York Academy of Medicine, 78*, 458-467. Kessler
- Kessler, R.C., Chiu, W.T, Demler, O., Merikangas, K.R, & Walters, E.E. (2005). Prevalence, severity and comorbidity of 12-month DSM-IV disorders in the National Comorbidity Survey Replication. *Archives of General Psychiatry, 62*, 617-627.
- Kessler, R. C., Sonnega, A., Bromet, E., Hughes, M., & Nelson, C. B. (1995). Posttraumatic stress disorder in the national comorbidity survey. *Archives of General Psychiatry, 52*, 1048-1060.
- King, D., Taft, C., King, L., Hammond, C., & Stone, E. (2006). Directionality of the association between social support and posttraumatic stress disorder: a longitudinal investigation. *Journal of Applied Social Psychology, 36*, 2980-2992.
- Kleijn, van Heck & van Waning, (1998). Resources Questionair: (ResQ)
- Kleijn, W. C., Van Heck, G. L., & Van Waning, A. (2000). Ervaringen met de Nederlandse bewerking van de COPE copingvragenlijst: De COPE-Easy. *Gedrag & Gezondheid, 28*, 213-226.
- Kleyn, W. C., Hovens, J. E., & Rodenburg, J. J. (2001). Posttraumatic stress symptoms in refugees: assessment with the Harvard trauma questionnaire and the Hopkins symptom checklist-25 in different languages. *Psychological reports, 88*, 527-532.
- Mollica, R. F., Caspi-Yavin, Y., Bollini, P., Truong, T., Tor, S., & Lavelle, J. (1992). The Harvard trauma questionnaire: validating a cross-cultural instrument for measuring torture, trauma, and posttraumatic stress disorder in refugees. *Journal of Nervous Mental Disorders, 18*,. 111-116.
- Mollica, R. F., McInnes, K., Poole, C., & Tor, S. (1998). Dose-effect relationships of trauma

- to symptoms of depression and post-traumatic stress disorder among Cambodian survivors of mass violence. *British Journal of Psychiatry*, *173*, 482-488.
- Monson, C. M., Fredman, S. J., & Adair, K. C. (2008). Cognitive-behavioral conjoint therapy for posttraumatic stress disorder: application to operation enduring and Iraqi freedom veterans. *Journal of Clinical Psychology*, *64*, 958-971.
- Nickerson, A., Bryant, R. A., Silove, D., & Steel, Z. (2011). A critical review of psychological treatments of posttraumatic stress disorder in refugees. *Clinical Psychology Review*, *31*, 399-417.
- Olf, M., Langeland, W., Draijer, N., & Gersons, B.P.R. (2007). Gender differences in posttraumatic stress disorder. *Psychological Bulletin*, *133*, 183-204.
- Olstad, R., Sexton, H., & Sogaard, A. J. (2001). The Finnmark study: A prospective population study of the social support buffer hypothesis, specific stressors and mental distress. *Social Psychiatry and Psychiatric Epidemiology*, *36*, 582-589.
- Ozer, E. J., Best, S. R., Lipsey, T. L., & Weiss, D. S. (2003). Predictors of Posttraumatic Stress Disorder and Symptoms in Adults: A Meta-Analysis. *Psychol Bull*, *129*, 52-73.
- Palic, S., & Elklit, A. (2010). Psychological treatment of posttraumatic stress disorder in adult refugees: A systematic review of prospective treatment outcome studies and a critique. *Journal of Affective Disorders*.
- Pernice, R., & Brook, J. A. (1996). Refugees' and immigrants' mental health: Association of demographic and post-immigration factors. *The Journal of Social Psychology*, *136*, 511-519.
- Wilkinson, R., Marmot, M. (2003). *Social Determinants of Health*, 2ed. Oxford University Press: Oxford.
- Sanctuary Australia Foundation, (n.d.). Retrieved from <http://www.sanctuaryaustralia-foundation.org.au/refugee-stories/yves-my-life-as-a-refugee/>
- Shumaker, S. A. & Hill, D. R. (1991). Gender differences in social support and physical

SOCIAL SUPPORT AND TREATMENT CHANGE

- health. *Health Psychology, 10*, 102-111.
- Smith Fawzi, M., Murphy, E., Phalm, T., Lin, L., Poole, C., & Mollica, R. (1997). The validity of screening for posttraumatic stress disorder and major depression among Vietnamese former political prisoners. *Acta Psychiatrica Scandinavia, 95*, 87-93.
- Steel, Z., Solove, D., Phan, T., & Bauman, A. (2002). Long-term effect of psychological trauma on the mental health of Vietnamese refugees resettled in Australia: a population-based study. *Lancet, 360*, 1056-1062.
- Steel, Z., Chey, T., Silove, D., Marnane, C., Bryant, R. A., & van Ommeren, M. (2009). Association of torture and other potentially traumatic events with mental health outcomes among populations exposed to mass conflict and displacement: a systematic review and meta-analysis. *JAMA, 302*, 537-549.
- Vogt, D. S., King, D. W., & King, L. A. (2007). Risk pathways for PTSD: Making sense of the literature. In M. J. Friedman, T. M. Keane, and P. A. Resick (Eds.). *Handbook of PTSD: Science and practice* (pp. 99-115). New York, NY: Guilford Press.
- Thapa. S., & Hauff, E. (2005). Psychological distress among displaced persons during an armed conflict in Nepal. *Social Psychiatry and Psychiatric epidemiology, 40*, 627-679.
- Turner, S., Bowie, C., Dunn, G., Shapo, L., & Yule, W. (2003). The mental health of Kosovan Albanian refugees in the UK. *British Journal of Psychiatry, 184*, 444-448.
- UNHCR. (2012). UNHCR global trends 2011. Geneva: United Nations High Commissioner for Refugees. Retrieved from <http://www.unhcr.org/4fd6f87f9.pdf>
- WHOQOL Group. (1998). Development of the World Health Organization WHOQOL-BREF Quality of life assessment. *Psychological Medicine, 28*, 551-558.
- World Health Organisation. (1992). *ICD 10: Classification of mental and behavioural disorders: Clinical description and diagnostic guidelines*. Geneva: W.H.O.
- The WHOQOL Group. (1998). Development of the World Health Organisation WHOQOL-

SOCIAL SUPPORT AND TREATMENT CHANGE

BREF quality of life assessment. *Psychological Medicine*, 28, 551-558.

Yuan, Q., Xiang, Y., Yan, Z., Han, C., Jan, L.Y., Jan, Y.N. (2011). Light-induced structural and functional plasticity in *Drosophila* larval visual system. *Science* 333. 1458-1462.

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Appendix

	Men	Female	Total
Amount/number	126	51	177
Age (mean)			44,16 years (SD =8.73)
Afghanistan	16	2	18
(Belgian) Congo	1	0	1
Bosnia-Herzegovina	22	15	37
Burundi	0	1	1
Cambodia	1	0	1
Egypt	1	0	1
Eritrea	0	2	2
Ethiopia	0	1	1
Georgia	0	1	1
Iraq	23	4	27
Iran	23	8	31
Israel	1	0	1
Yugoslavia	9	6	15
Kazakhstan	0	1	1
Kuwait	2	0	2
Croatia	1	0	1
Libanon	3	0	3
Unknown	6	1	7
Pakistan	1	0	1
Russia	1	1	2
Rwanda	1	0	1
Sierra Leone	1	0	1
Sudan	0	1	1
Somalia	2	2	4
Soviet Union	1	0	1
Syria	3	1	4
Turkey	5	4	9
Vietnam	1	0	1
Total			177